

MSHA WEBCAST WITH STAKEHOLDERS



January 28, 2004

WEBCAST

- Heightened awareness of fatal accidents involving remote control continuous mining machines
- Update on proximity device – Dave Chirdon (MSHA)

PROXIMITY PROTECTION SYSTEM

- A safety system that provides proximity detection and machine shutdown when personnel are positioned in a hazardous area close to the machine.
- Consists of:
 - backpack unit worn by machine operator;
 - on-board logic and antenna;
 - receiver and transmitter that communicate warning and shutdown commands.

PROXIMITY PROTECTION PROJECT PARTNERS

- Nautilus International provides proximity protection system.
- Massey Energy provides machine and miner for installation and field testing.
- Joy Mining provides installation assistance and technical support.
- MSHA coordinates activities; provides permissibility evaluation; and conducts field testing studies.

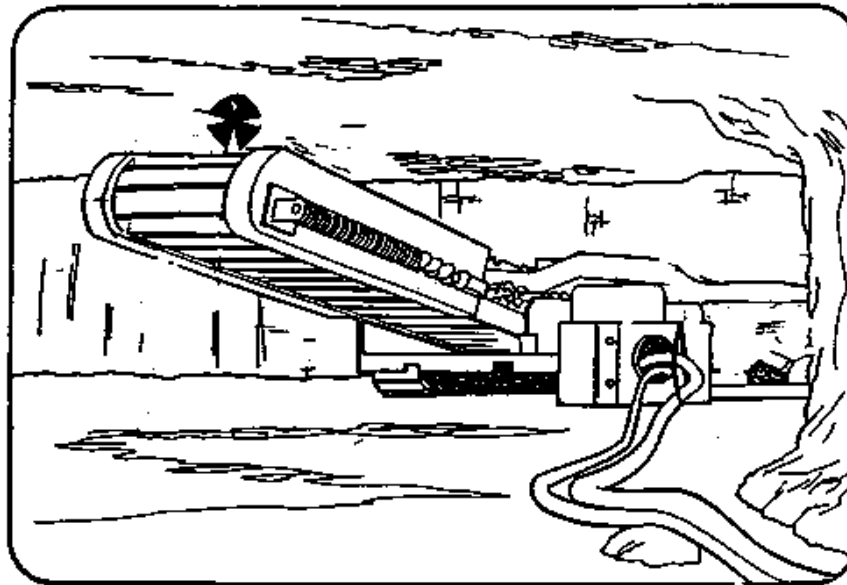
PROXIMITY PROTECTION PROJECT STATUS

- Permissible system designed and installed on Massey 12CM in April 2003
- Field testing started in July 2003
- Problems identified with on-board antenna and beltpack unit requiring re-design
- Re-design completed and system currently being installed on Joy 12CM in Franklin, PA
- Field testing expected to resume in early spring

- **COAL MINE FATALITY** - On Friday, March 24, 1995, a maintenance trainee was fatally injured while working as a continuous mining machine helper. The continuous mining machine operator, utilizing a remote control, was in the process of tramming the continuous mining machine through a crosscut. The operator was walking in front of the machine as the machine moved toward him. The maintenance trainee was attending to the continuous mining machine power cable at the rear of the machine. When the continuous mining machine was "squirmed" the conveyor boom crushed the trainee against the inby rib of the crosscut. The victim had three weeks of mining experience.
- The continuous mining machine operator's line of sight to the rear of the mining machine and the victim, a distance of thirty feet, was obstructed by illumination from the mining machine's headlight. Two other employees were in close proximity to the moving continuous mining machine, between the machine's operator and the victim.

COAL MINE FATALITY - On Tuesday, April 18, 1995, at 2:10 a.m., an electrician helper was fatally injured while making repairs to a radio-remote controlled continuous mining machine. The electrician helper was positioned in the conveyor of the continuous miner during the installation of a hydraulic relief valve. The conveyor boom of the continuous miner was positioned against the roof and had been securely blocked. The helper remained in the conveyor to observe the relief valve for oil leaks while another miner energized the radio-remote. When the pan switch was engaged on the radio-remote control, the conveyor chain also started.

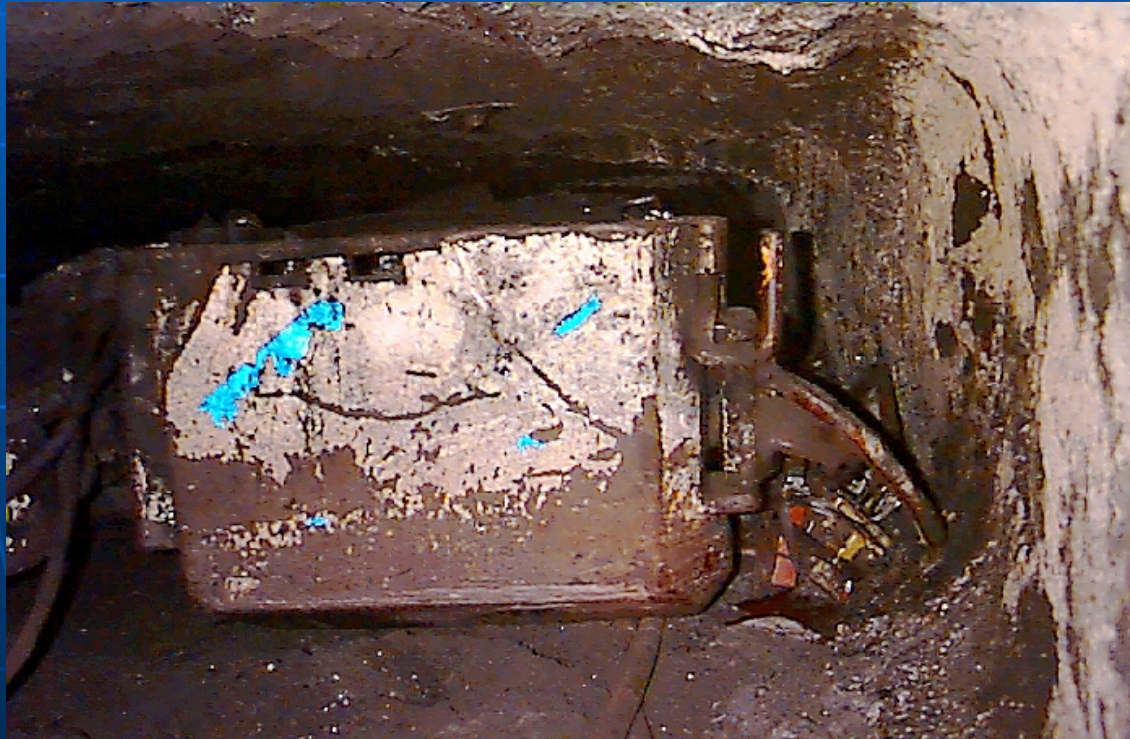
The electrician helper was forcibly pushed against the roof by the conveyor chain.



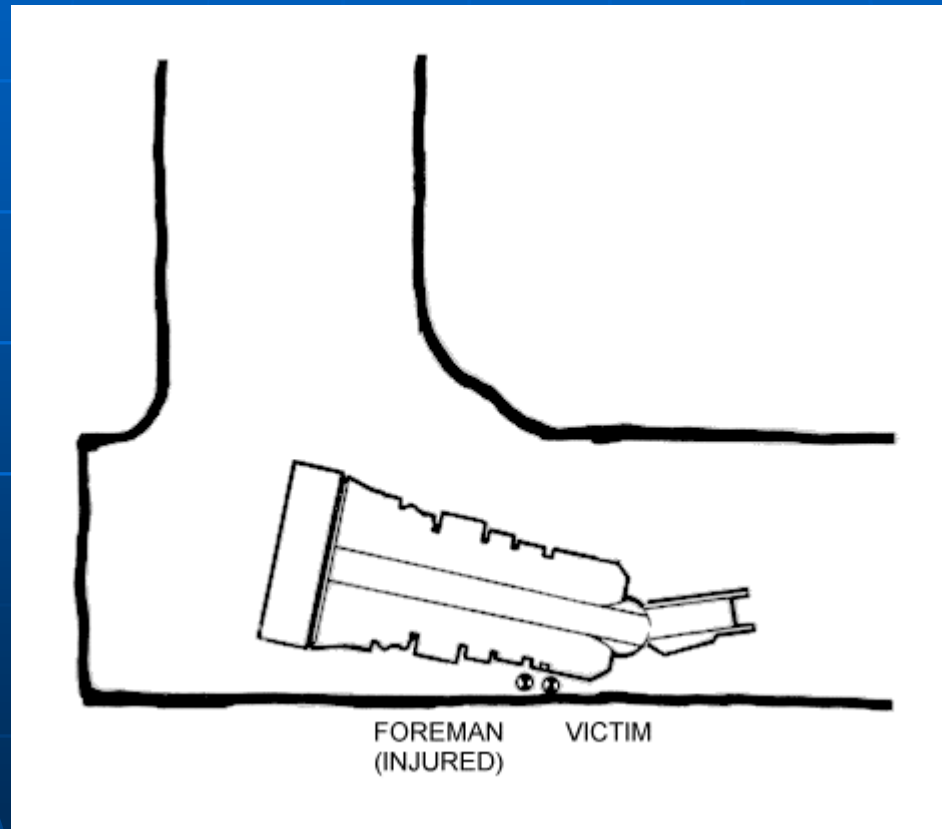
FATAL MACHINERY ACCIDENT
No. 1 Mine (ID No. 46-07430)
Daniel's Branch Coal Co., Inc.
Hampden, Mingo County, West Virginia

APRIL 18, 1995

COAL MINE FATALITY - On Monday, October 21, 1996, a continuous mining machine operator, using a radio remote control, had backed the continuous mining machine away from the face. The mining machine operator crawled inby, dragging the remote control unit, to the rear corner of the mining machine. The continuous mining machine's trailing cable rolled out of the side cable hook and fell onto the remote control unit inadvertently activating the left tram reverse control. The rear portion of the mining machine moved suddenly toward the right rib, crushing the continuous mining machine operator. Investigators found the remote control unit's "slide" tram control safety-device, taped in the activated position.

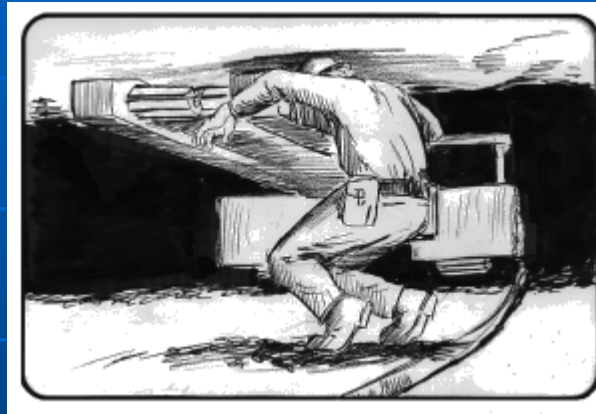


COAL MINE FATALITY - On Friday, March 28, 1997, in Eighty-Four, Pennsylvania, two mechanics and a maintenance foreman were troubleshooting a remote-controlled continuous mining machine. During mining operations, the continuous mining machine was not functioning properly and had unexpectedly stopped while tramping out of a working place. One of the mechanics was crouching between the machine and the coal rib peering through a sight glass to observe the operation of the diagnostic lights of the remote-controlled circuit. The continuous mining machine pivoted suddenly, pinning the maintenance foreman and the crouching mechanic against the coal rib. The mechanic was fatally injured but the foreman only received minor injured.



Plan View of the Accident Area

COAL MINE FATALITY-On Monday, July 26, 1999, a continuous miner helper was fatally injured in a machinery accident. The victim was attempting to drag the trailing cable out of the #3 entry when he apparently tripped or stumbled forward against the conveyor boom of the continuous miner which was being trammed across the intersection toward the #2 entry. The continuous miner trammed over road gob causing the conveyor boom end of the machine to tilt upward against the mine roof crushing the miner helper between the boom and mine roof resulting in fatal injuries. The miner operator reported that he was not aware that the victim had fallen against the boom of the machine.



BEST PRACTICES

- **All miners should be in a safe location while the continuous miner is being moved from one location to another.**
- **All mining equipment should be stopped while the trailing cable is being hung**
All personnel who operate a continuous miner should be instructed to make sure the conveyor boom and ripper head are lowered, as far as possible, prior to moving the miner from one location to another.
- **All miners should wear reflective material.**

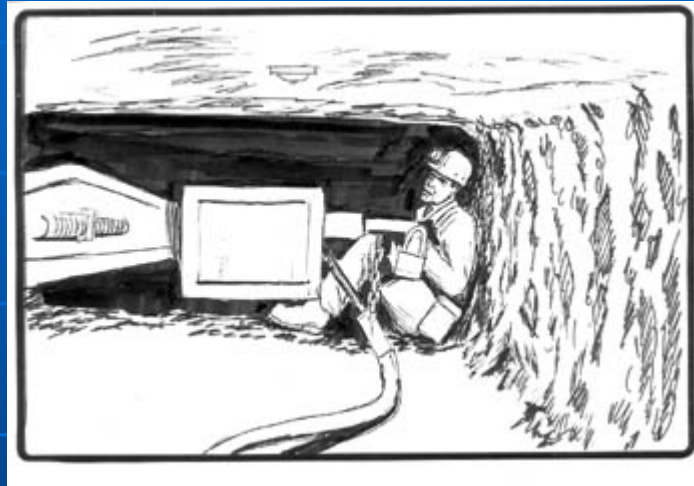
COAL MINE FATALITY - On Friday, January 21, 2000, a continuous mining machine operator was fatally injured when he came in contact with the ripper head of the continuous mining machine while it was in motion. While there were no eye witnesses to the accident, it was reported that the victim had positioned himself in front of the continuous mining machine in order to change bits. At the time of the accident the victim had the machine's remote control box in his possession.



Best Practices

- All power circuits and electrical equipment shall be de-energized before any work is done on such circuits and equipment.
- All areas where persons are required to work or travel should be kept free of tripping and stumbling hazards.
- Always make sure that all persons, including yourself, are in a safe location before energizing.

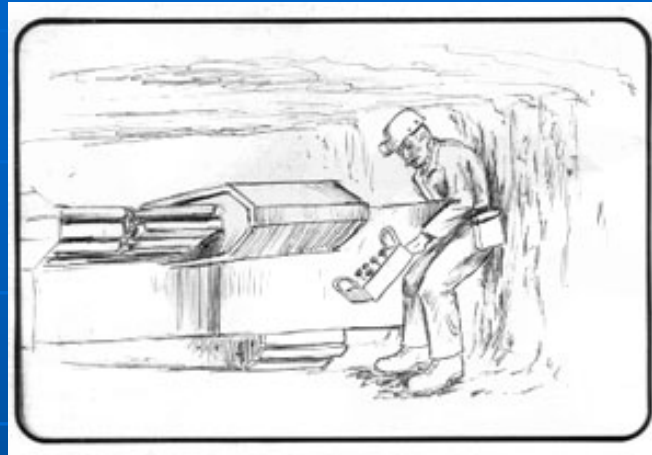
COAL MINE FATALITY - On Friday, May 12, 2000, a 29 year old continuous mining machine operator, using a radio remote control, positioned himself between the mining machine and right rib as he trammed the machine out of the working face. Fatal crushing injuries resulted when the victim was caught by the trailing cable support bracket, which protruded about 17 inches from the right rear side of the machine. The mining height at this location was 41 inches.



Best Practices

- When a continuous mining machine is being trammed by remote control, the continuous mining machine operator and all other persons must be outside the machine's turning radius and away from pinch points at all times.
- Adequate task training to assure safe operation of equipment requires training and observation of all tasks required to be performed by the equipment operator. Proper follow up is required to assure the training is understood and implemented.

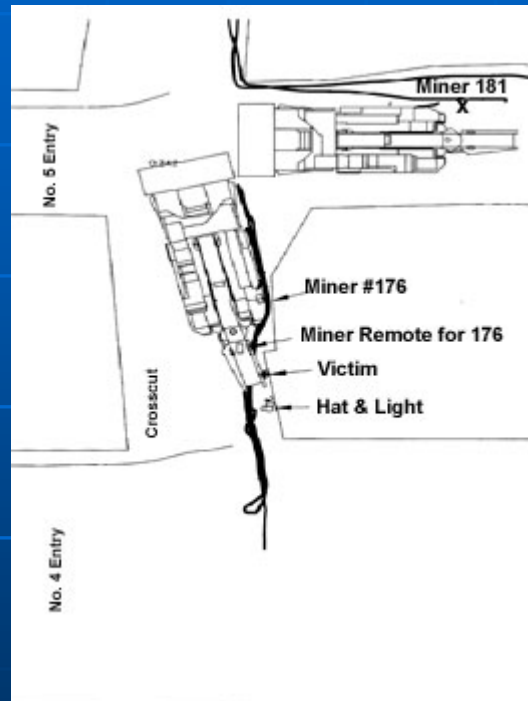
COAL MINE FATALITY - On Tuesday, August 15, 2000 a 40 year old continuous mining machine operator with 22 years experience received fatal crushing injuries while tramming a radio remote control mining machine. The victim was caught between the rear of the continuous mining machine and the coal rib.



Best Practices

- When a continuous mining machine is being trammed by remote control, the continuous mining machine operator and all other persons must be outside the machine's turning radius and away from pinch points at all times.
- All persons helping operators move mobile equipment should be positioned a safe distance from the equipment while it is in motion.
- Always be alert to your location when equipment is in motion.

COAL MINE FATALITY - On Thursday, April 12, 2001, a 50 year old, continuous mining machine operator, with 22 years experience, received fatal crushing injuries when he was caught between the tail boom of the continuous miner and the coal rib. The victim had trammed the No. 176 Joy 12CM27 continuous miner from the No. 4 entry towards the No. 5 entry to pull up slack cable and was in the process of removing the excess cable from the miner boom. The ripper head of the No. 176 miner extended into the No. 5 entry. The No.181 Joy 12CM27 continuous miner was being trammed up the No.5 entry where it struck the ripper head of the No. 176 miner causing the tail boom to swing, catching the victim between the boom and the coal rib.



Best Practices

- All personnel should remain a safe distance from any pinch point areas of the continuous miners.
- All personnel should verify their proposed route of travel is clear when tramping continuous miners into position.
- Adequate task training should be performed to assure safe operation of equipment.

COAL MINE FATALITY - On Wednesday, November 21, 2001, a fatal machinery accident claimed the life of a 38 year old continuous mining machine operator. The operator had completed mining in a crosscut, and was backing the continuous miner from the No. 3 entry to the No. 4 entry, to allow roof bolting equipment access to the area which was mined. The operator was found pinned between the cutting head of the continuous mining machine and the out by coal rib.



Best Practices

- Always be sure that everyone is in a safe location when starting the equipment.
- Equipment should be deenergized before any work is done on the equipment.
- Do not position yourself anywhere beside the continuous miner during tramming operations.
- Ensure that persons are beyond the continuous miner's turning radius during remote control tramming.

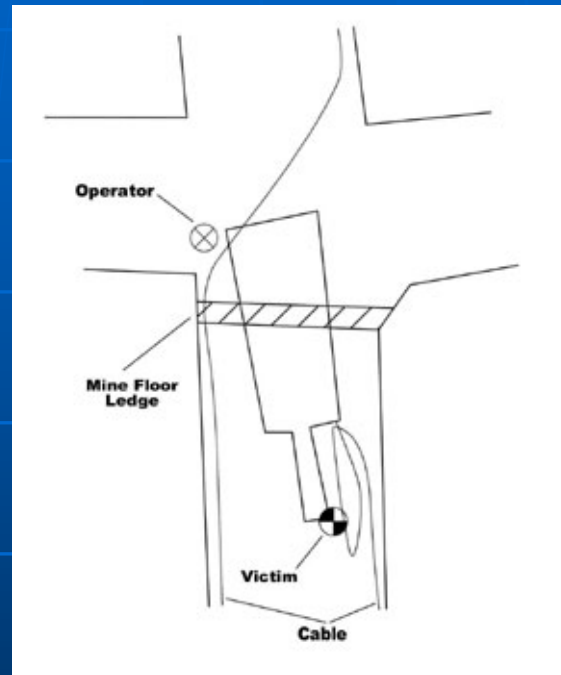
COAL MINE FATALITY - On March 22, 2002, a 33 year old section foreman was fatally injured when he was caught between the conveyor boom of a continuous mining machine and the coal rib. The victim was using a remote control unit to tram the machine when he was struck by the end of the conveyor boom.



Best Practices

- Continuous mining machine operators should never be located between the machine and the coal rib while the machine is being trammed from place to place by remote control.
- When moving continuous mining machines around corners, or in other instances where the left and right traction drives are operated independently, low tram speed should be used.
- The pump motor should be de-energized, and all machine motion stopped, when the trailing cable or water line has to be repositioned in close proximity to the continuous mining machine.

COAL MINE FATALITY - On Monday, August 12, 2002, at approximately 1:45 p.m., a 23 year old miner was killed when his head was caught between the conveyor boom of the continuous mining machine and the mine roof. The continuous mining machine operator and victim were moving the mining machine from the working section to the surface for repairs. About half way to the surface, the front of the machine dropped over a small ledge in the mine floor causing the conveyor boom to strike the roof. The victim, who had been assisting with the continuous miner cable, was caught between the boom and roof. The victim's regular job title was greaser. He had 6 months and 10 days of mining experience.



Best Practices

- Establish procedures for moving machinery and equipment.
- Assure that personnel do not position themselves in proximity to moving machinery.
- Maintain clear visibility with all personnel in the vicinity of moving equipment.
- Keep trailing cables on the operator's side of the machine when moving the machine.

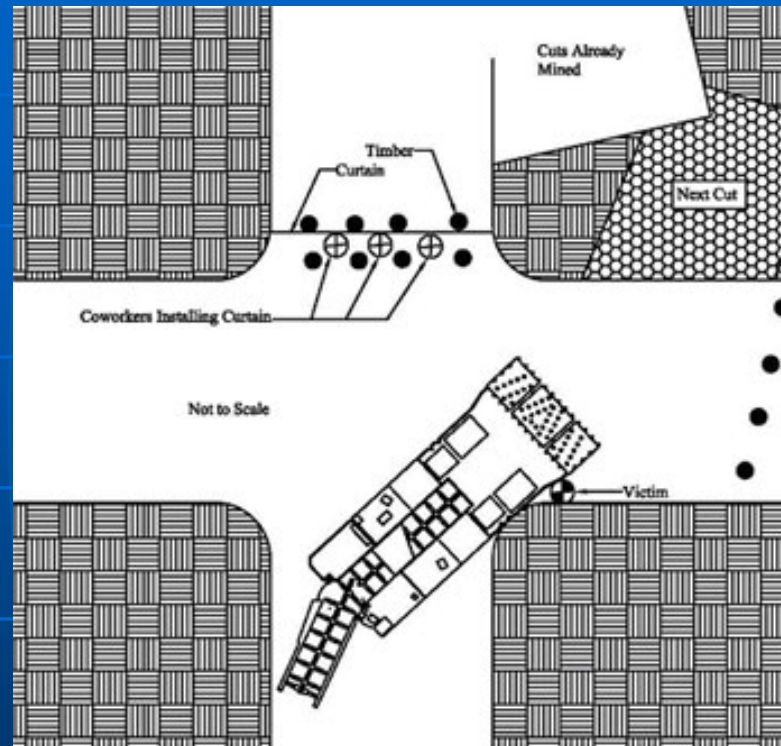
COAL MINE FATALITY - On Tuesday, April 15, 2003, a fatal machinery accident claimed the life of a 43-year-old continuous mining machine operator with 12 years of mining experience. The operator had completed mining in the face of No. 2 entry and was backing up the remote control continuous miner to clean up the left side of the cut. The operator was found behind the line curtain and was pinned between the left rear of the continuous mining machine and the left rib.



Best Practices

- Avoid pinch points between the rib and machinery during tramming operations.
- Ensure everyone is in a safe location when starting and moving the equipment.
- Avoid positioning yourself behind the line curtain while tramming machinery.
- Ensure that persons are beyond the machine's turning radius during remote control tramming.

COAL MINE FATALITY - On October 22, 2003, at approximately 10:00 a.m., a 41-year-old continuous mining machine operator was fatally injured when he was pinched between the continuous mining machine and the coal rib. The victim was positioning the machine by remote control for an end-cut while second mining a coal pillar. As the continuous mining machine was being trammed toward the next cut, it pivoted to the right; crushing the victim between the cutting head and the rib of the outby coal pillar.



- Ensure everyone is outside the machine's turning radius and in a safe location when starting and moving such equipment.
- Stop equipment while hanging or positioning trailing cables.
- Ensure that continuous mining machine operators lower the conveyor boom and ripper head, as far as possible, prior to moving the machine.
- Ensure that a Standard Operating Procedure (SOP) is in place before tramping the remote controlled continuous miner to another entry or crosscut.
- Avoid pinch points between the rib and machinery during tramping operations.

Remote Control CM Crushing Fatalities

Fatalities

5

4

3

2

1

0

Average = 1.3 per yr.

1988

1989

1990

1991

1992

1993

1994

1995

1996

1997

1998

1999

2000

2001

2002

2003

CY

Data: Tech Support 11/5/03



WEBCAST DISCUSSION:

QUESTION AND ANSWER PERIOD:

ANY PERSON WHO DID NOT GET THE OPPORTUNITY TO FIELD THEIR QUESTION, PLEASE CONTACT THE MSHA DIVISION OF SAFETY AT:

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